DBMS Assignment 01

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ER Diagram-

Data Model : Diagram

Online-Book-Store-Design.xlsx
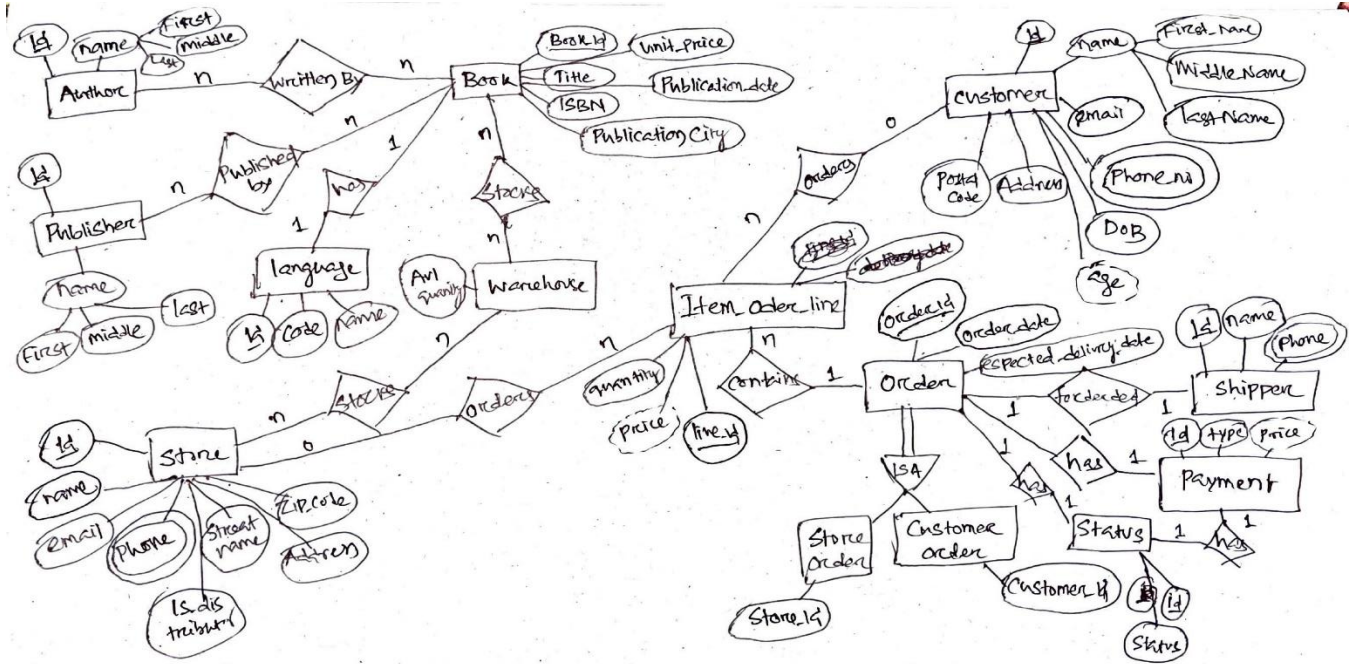
Store Procedure:

sp_GetBooks – input storeid , bookid & quantity.

Description: To place an order for store when running out of Book Stock. This will be placing an order for the Store, generating the payment and delivery details, and updating the warehouse with the book quantity.

O/P – Display

Distributor_Order,

Distributor_Order_Details,

Distributor_Payment_Details &

Book_Available_Details.

Test :

Current Available Status of Book_ID = 1 in Store_id = 4 is 0.

The store wanted to place an order of 10 book.

Distributor_Order:

Distributor_Order_Details

```
41 ●    CALL sp_GetBooks (4, 1, 10)
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: 𝄈A

dist_line_id	order_id	book_id	quantity	price
1034	1225	1	10	4220

Result 2   Result 3 ✕   Result 4   Result 5

Payment_Details:

```
41 ●    CALL sp_GetBooks (4, 1, 10)
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: 𝄈A

payment_id	payment_type	price	payment_status	order_id	status_Id
232	ONLINE	4220	NULL	1225	2

Result 2   Result 3   Result 4 ✕   Result 5

Updated_Book_Available_Details:

```
41 ●    CALL sp_GetBooks (4, 1, 10)
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: 𝄈A

store_id	book_id	available_quantity
4	1	10

Result 2   Result 3   Result 4   Result 5 ✕

Trigger:

before_is_available : -> BEFORE INSERT ON Customer_order_line

Desc: To check the user-requested book quantity. If the appropriate quantity is unavailable, it will restrict the entry of the record to the table and show an appropriate error message.

Condition 1: When requested quantity <=0 : Display Error: "PLEASE ENTER A VALID BOOK QUANTITY"

Condition 2: When requested quantity > Available Quantity: Display Error: "NOT AVAILABLE - ORDER QUANTITY EXCEEDS AVAILABLE QUANTITY - AVAILABLE_BOOK_QTY = #{No of Quantity Available}"

Condition 3: When requested quantity < Available Quantity:

The record will be inserted into the Table and also Book Availability will be updated as Book_Quantity – Ordered_Book_Quantity

Test:

Currently Book Availability

Condition 1 : requesting invalid quantity or 0 Quantity

Condition 2 : requested quantity > Available Quantity

Condition 3: When requested quantity < Available Quantity:

```
13
14 •   INSERT INTO Customer_order_line  (order_id, book_id, quantity,price)VALUES
15      (257,1,2,calculate_order_price(1,1));
```

Output

Action Output

#	Time	Action	Message
✓	1	03:03:27	INSERT INTO Customer_order_line (order_id, book_id, quantity,pri...	1 row(s) affected

Order_Details

```
33 •   select * from Customer_order_line where order_id = 257;
```

Result Grid | Filter Rows: Edit: Export/Impc

	cust_line_id	order_id	book_id	quantity	price
►	567	257	1	2	422
*	NULL	NULL	NULL	NULL	NULL

Also Checking Current Book_Availability :

```
32 •   SELECT  * from  Warehouse    WHERE Warehouse.book_id = 1 and Warehouse.store_id = 4;
33 •   select * from Customer_order_line where order_id = 257;
```

Result Grid | Filter Rows: Edit: Export/Import: Wrap Cell Content: IA

	store_id	book_id	available_quantity
►	4	1	8
*	NULL	NULL	NULL

before_genrate_book_unit_price : -> BEFORE INSERT ON book : To Generate a random Book Price when entered as empty or less than 0.

```
46
47      -- Inserting book with no unit price
48 •   INSERT INTO book (title, isbn, language_id, num_pages, publication_date, publisher_id) VALUES
49      ('Test-01','7104300569878',2,112,'2023-02-17', 354);
50 •   select * from Book where title = 'Test-01';
```

Result Grid | Filter Rows: Edit: Export/Import: Wrap Cell Content: IA

	book_id	title	isbn	language_id	num_pages	unit_price	publication_date	publication_City	publisher_id
►	11128	Test-01	7104300569878	2	112	481.00	2023-02-17	NULL	354
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Function :

calculate_order_price : Calculate the Amount

input Param - book_id & quantity

output/Return - order_value = Book_Price * Quantity

```
34 •    SELECT * FROM BOOK WHERE book_id = 17;
```

	book_id	title	isbn	language_id	num_pages	unit_price	publication_date	publication_City	publisher_id
▶	17	The Mystery on the Mighty Mississippi	710430023639	1	142	120.00	2001-04-01	NULL	354
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Calculating 5 Book price :

```
35
36 •    select calculate_order_price(17,5);
```

	calculate_order_price(17,5)
▶	600

Fetching Below Query Results:

Q6: Write PYTHON codes that connects to this database and use SQL commands to select and

retrieve information about availability of books identified by title, author, publisher or year

of publication

```
57 •  SELECT B.BOOK_ID,B.TITLE,B.publication_date,A.author_NAME, P.publisher_name,S.store_name, W.available_quantity FROM BOOK B INNER JOIN Publisher P ON B.publisher_
58    INNER JOIN Book_Author BA ON B.BOOK_ID = BA.BOOK_ID
59    INNER JOIN AUTHOR A ON A.author_id = BA.author_id
60    INNER JOIN Warehouse W ON W.BOOK_ID = B.BOOK_ID
61    INNER JOIN STORE S ON S.STORE_ID = W.STORE_ID
62    WHERE B.BOOK_ID IN (1,2,3,4,5,6,7,8,9,10);
```

	BOOK_ID	TITLE	publication_date	author_NAME	publisher_name	store_name	available_quantity
▶	1	The World's First Love: Mary Mother of God	1996-09-01	Fulton J. Sheen	Ignatius Press	Distributor 1	40
	1	The World's First Love: Mary Mother of God	1996-09-01	Fulton J. Sheen	Ignatius Press	Distributor 4	6
	2	The Illuminati	2004-10-04	Larry Burkett	Thomas Nelson	Distributor 1	40
	2	The Illuminati	2004-10-04	Larry Burkett	Thomas Nelson	Distributor 4	32
	3	The Servant Leader	2003-03-11	Kenneth H. Blanchard	Thomas Nelson	Distributor 1	40
	3	The Servant Leader	2003-03-11	Kenneth H. Blanchard	Thomas Nelson	Distributor 5	32
	4	What Life Was Like in the Jewel in the Crown: B...	1999-09-01	Time-Life Books	Time Life Medical	Distributor 1	40
	4	What Life Was Like in the Jewel in the Crown: B...	1999-09-01	Time-Life Books	Time Life Medical	Distributor 5	32
	5	Cliffs Notes on Aristophanes' Lysistrata The Bir...	1983-12-29	W. John Campbell	Cliffs Notes	Distributor 1	40
	5	Cliffs Notes on Aristophanes' Lysistrata The Bir...	1983-12-29	W. John Campbell	Cliffs Notes	Distributor 6	32
	6	Life Is a Dream and Other Spanish Classics (Eric...	2000-04-01	Eric Bentley	Applause Theat...	Distributor 2	40
	6	Life Is a Dream and Other Spanish Classics (Eric...	2000-04-01	Lope de Vega	Applause Theat...	Distributor 2	40
	6	Life Is a Dream and Other Spanish Classics (Eric...	2000-04-01	Miguel de Cervantes ...	Applause Theat...	Distributor 2	40
	6	Life Is a Dream and Other Spanish Classics (Eric...	2000-04-01	Pedro Calderón de la...	Applause Theat...	Distributor 2	40
	6	Life Is a Dream and Other Spanish Classics (Eric...	2000-04-01	Roy Campbell	Applause Theat...	Distributor 2	40
	6	Life Is a Dream and Other Spanish Classics (Eric...	2000-04-01	Tirso de Molina	Applause Theat...	Distributor 2	40
	6	Life Is a Dream and Other Spanish Classics (Eric...	2000-04-01	Eric Bentley	Applause Theat...	Distributor 6	32
	6	Life Is a Dream and Other Spanish Classics (Eric...	2000-04-01	Lope de Vega	Applause Theat...	Distributor 6	32
	6	Life Is a Dream and Other Spanish Classics (Eric...	2000-04-01	Miguel de Cervantes ...	Applause Theat...	Distributor 6	32

MySQL with Python (Jupyter NoteBook)

MySQL Connector Installation for Anaconda :

GoTo Anaconda Command Prompt : Enter Below Command

conda install -c conda-forge mysql-connector-python

```
(base) C:\Users\Subrat>conda install -c conda-forge mysql-connector-python
Collecting package metadata (current_repodata.json): done
Solving environment: failed with initial frozen solve. Retrying with flexible solve.
Solving environment: failed with repodata from current_repodata.json, will retry with next repodata source.
Collecting package metadata (repodata.json): done
Solving environment: /
Warning: 2 possible package resolutions (only showing differing packages):
  - anaconda/win-64::certifi-2021.10.8-py39haa95532_0
  - defaults/win-64::certifi-2021.10.8-py39haa95532done


==> WARNING: A newer version of conda exists. <==
  current version: 22.9.0
  latest version: 23.1.0

Please update conda by running

    $ conda update -n base -c defaults conda



## Package Plan ##

  environment location: C:\Users\Subrat\anaconda3

  added / updated specs:
    - mysql-connector-python


The following packages will be downloaded:

    package                    |            build
    ---------------------------|-----------------
    conda-22.9.0               |   py39hcbf5309_2         985 KB  conda-forge
    conda-build-3.23.3         |   py39hcbf5309_1         551 KB  conda-forge
    dnspython-2.3.0            |     pyhd8ed1ab_0         152 KB  conda-forge
    libprotobuf-3.16.0         |       h7755175_0         2.3 MB  conda-forge
    m2-msys2-runtime-2.5.0.17080.65c939c|              3         3.0 MB  conda-forge
    m2-patch-2.7.5             |              2          90 KB  conda-forge
    mysql-common-8.0.25        |       h57928b3_0         1.5 MB  conda-forge
    mysql-connector-python-8.0.25|   py39h2d44264_0         578 KB  conda-forge
    mysql-libs-8.0.25          |       hb8c0690_0         1.7 MB  conda-forge
    protobuf-3.16.0            |   py39h415ef7b_0         262 KB  conda-forge
    python_abi-3.9             |           2_cp39           4 KB  conda-forge
```

Connection :

DBMS Assignment

**Submitted BY : Subrat Kumar Nanda

In [67]:
```python
import mysql.connector
import pandas as pd
```

In [95]:
```python
import mysql.connector as mysql
myconn = mysql.connect(host='127.0.0.1',database='MY_BOOKS_SN', user='root', password='Admin')
```

In [16]:
```python
# Test my Connection
myconn
```

Out[16]: <mysql.connector.connection_cext.CMySQLConnection at 0x19796b15c10>

**Get all Tables Name

In [19]:
```python
tables = pd.read_sql_query('SHOW TABLES',myconn)
tables
```

Out[19]:

	Tables_in_my_books_sn
0	author
1	book
2	book_author
3	book_language
4	cust_order
5	customer
6	customer_order_line
7	customer_paymet_details

Query Results:

***Write PYTHON codes that connects to this database and use SQL commands to select and retrieve information about availability of books identified by title, author, publisher or year of publication

In [101]:
```python
sql_select_Query = """SELECT B.BOOK_ID,B.TITLE,B.publication_date,A.author_NAME, P.publisher_name,S.store_name, W.available_quant
INNER JOIN Book_Author BA ON B.BOOK_ID = BA.BOOK_ID
INNER JOIN AUTHOR A ON A.author_id = BA.author_id
INNER JOIN Warehouse W ON W.BOOK_ID = B.BOOK_ID
INNER JOIN STORE S ON S.STORE_ID = W.STORE_ID
WHERE B.BOOK_ID IN (1,2,3,4,5,6,7,8,9,10);"""

cursor.execute(sql_select_Query)
cursor.fetchall()
```

Out[101]: [(1,
  "The World's First Love: Mary Mother of God",
  datetime.date(1996, 9, 1),
  'Fulton J. Sheen',
  'Ignatius Press',
  'Distributor 1',
  40),
 (1,
  "The World's First Love: Mary Mother of God",
  datetime.date(1996, 9, 1),
  'Fulton J. Sheen',
  'Ignatius Press',
  'Distributor 4',
  6),
 (2,
  'The Illuminati',
  datetime.date(2004, 10, 4),
  'Larry Burkett',
  'Thomas Nelson',

```
In [102]: my_result_01 = pd.read_sql_query(sql_select_Query,myconn)
          my_result_01
```

Out[102]:

	BOOK_ID	TITLE	publication_date	author_NAME	publisher_name	store_name	available_quantity
0	1	The World's First Love: Mary Mother of God	1996-09-01	Fulton J. Sheen	Ignatius Press	Distributor 1	40
1	1	The World's First Love: Mary Mother of God	1996-09-01	Fulton J. Sheen	Ignatius Press	Distributor 4	6
2	2	The Illuminati	2004-10-04	Larry Burkett	Thomas Nelson	Distributor 1	40
3	2	The Illuminati	2004-10-04	Larry Burkett	Thomas Nelson	Distributor 4	32
4	3	The Servant Leader	2003-03-11	Kenneth H. Blanchard	Thomas Nelson	Distributor 1	40
5	3	The Servant Leader	2003-03-11	Kenneth H. Blanchard	Thomas Nelson	Distributor 5	32
6	4	What Life Was Like in the Jewel in the Crown: ...	1999-09-01	Time-Life Books	Time Life Medical	Distributor 1	40
7	4	What Life Was Like in the Jewel in the Crown: ...	1999-09-01	Time-Life Books	Time Life Medical	Distributor 5	32
8	5	Cliffs Notes on Aristophanes' Lysistrata The ...	1983-12-29	W. John Campbell	Cliffs Notes	Distributor 1	40
9	5	Cliffs Notes on Aristophanes' Lysistrata The ...	1983-12-29	W. John Campbell	Cliffs Notes	Distributor 6	32
10	6	Life Is a Dream and Other Spanish Classics (Er...	2000-04-01	Eric Bentley	Applause Theatre & Cinema Book Publishers	Distributor 2	40
11	6	Life Is a Dream and Other Spanish Classics (Er...	2000-04-01	Lope de Vega	Applause Theatre & Cinema Book Publishers	Distributor 2	40
12	6	Life Is a Dream and Other Spanish Classics (Er...	2000-04-01	Miguel de Cervantes Saavedra	Applause Theatre & Cinema Book Publishers	Distributor 2	40
13	6	Life Is a Dream and Other Spanish Classics (Er...	2000-04-01	Pedro Calderón de la Barca	Applause Theatre & Cinema Book Publishers	Distributor 2	40
14	6	Life Is a Dream and Other Spanish Classics (Er...	2000-04-01	Roy Campbell	Applause Theatre & Cinema Book Publishers	Distributor 2	40

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